DOCUMENT RESUME

ED 405 692 EC 305 402

TITLE	Variables Important to Learning: A Consensus from the Field.
INSTITUTION	Temple Univ., Philadelphia. Center for Research in Human Development and Education.
SPONS AGENCY	Special Education Programs (ED/OSERS), Washington, DC.
PUB DATE	Mar 90
NOTE	15p.; In: Designing and Evaluating School Learning Environments for Effective Mainstreaming of Special Education Students: Synthesis, Validation, and Dissemination of Research Methods. Final Report; see EC 305 400.
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	Educational Assessment; Educational Environment; *Educational Objectives; Educational Policy; Educational Practices; Elementary Secondary Education; Influences; *Instructional Effectiveness; *Learning Processes; Meta Analysis; Models; *Performance Factors; Program Design; Program Implementation; Questionnaires; Rating Scales; Student Characteristics; Teacher Student Relationship

ABSTRACT

This paper provides a list of variables identified as important to learning that emerged from a "meta-review" of the professional literature, as well as a summary of consensus ratings of these variables by professionals in the field. The variables are organized into six major categories: (1) state and district variables; (2) out of school contextual variables; (3) school-level variables; (4) student variables; (5) program design variables; and (6) implementation, classroom, instruction, and climate variables. A questionnaire with the list of variables was sent to six professional groups (researchers, policy makers, special and regular education teachers, school psychologists, and principals). A total of 1,123 persons, who were asked to rate each of the 228 variables according to a 3-point scale, responded to the questionnaire. Variables rated by the entire group as being of high importance and moderate importance in arranging learning environments were identified as "effective practices." (Author/DB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED 405 692

Variables Important to Learning:
A Consensus From the Field

Developed by
Temple University Center for Research
in Human Development and Education

The research reported herein was supported in part by the Temple University Center for Research in Human Development and Education and in part by a grant from the Office of Special Education Programs of the U.S. Department of Education. The opinions expressed do not necessarily reflect the position of the OSEP and no official endorsement should be inferred.

EC 305402

BEST COPY AVAILABLE

Variables Important to Learning:
A Consensus From the Field

This pamphlet provides a lists of all variables which emerged from a "meta-review" of professional literature concerned with variables that are important to school learning, as well as a summary of consensus ratings from the field.

The variables are organized under six major categories, as follows: a) State and District Variables, b) Out of School Contextual Variables, c) School Level Variables, d) Student Variables, e) Program Design Variables, and f) Implementation, Classroom Instruction, and Climate Variables. These variables constitute the items included in a questionnaire which was sent to six professional groups (i.e., researchers, policy makers, special and regular education teachers, school psychologists, and principals). In total, 1,123 persons responded to the questionnare. The respondents were asked to rate each of the variable items according to a 3-point scale.

Variables rated by the entire group as being of high importance (rating of 2.6 and above), and of moderate importance (rating of 2.0 - 2.5) in arranging learning environments are indicated under the column "Number of Effective Practices."

Variables Important To Learning: A Consensus From the Field

Variables	Number of Variables in Each Variable Category	Number of Effective Practices (rated as important) in Each Variable Category
CATEGORY I: State and District Variables		
A. District Level Demographics and Marker Variables	(10)	3
B. State Level Policy Variables	(6)	3
CATEGORY II: Out of School Contextual Variables		
A. Community Variables	(3)	3
B. Peer Group Variables	(5)	5
C. Home Environment and Parental Support Variables	(9)	9
D. Student Use of Out of School Time Variables	(5)	3
CATEGORY III: School Level Variables		
A. Demographic and Marker Variables	(8)	3
B. Teacher/Administrator Decision Making Variables	(6)	6
C. School Culture Variables (Ethos Conducive to Teaching and Learning)	(8) (13)	8
D. School-Wide Policy and Organizational Variables	(1)	11
E. Accessibility Variables	(2)	1
F. Parental Involvement Policy Variables		2
CATEGORY IV: Student Variables		
A. Demographic and Marker Variables	(7)	4
B. History of Educational Placements	(3)	3
C. Social and Behavioral Variables	(5)	5
D. Motivational and Affective Variables	(9)	9
E. Cognitive Variables	(12)	12
F. Metacognitive Variables	(4)	4
G. Psychomotor Variables	(1)	1
CATEGORY V: Program Design Variables		
A. Demographic and Marker Variables	(4)	4
B. Curriculum and Instructional Variables	(15)	15
C. Curriculum Design Variables	(13)	13
CATEGORY VI: Implementation, Classroom Instruction and Climate Variables		
A. Classroom Implementation Support Variables	(6)	4
B. Classroom Instructional Variables	(26)	26
C. Quantity of Instruction Variables	(12)	11
D. Classroom Assessment Variables	(4)	4
E. Classroom Management Variables	(5)	5
F. Student and Teacher Interactions: Social Variables	(6)	6
G. Student and Teacher Interactions: Academic Variables	(5)	5
H. Classroom Climate Variables	(15)	15

BEST COPY AVAILABLE

Variables	Consensus Rating

Category I. State and District Variables:

These are variables associated with state and district level school governance and administration. They include state curriculum and textbook policies, testing and graduation requirements, and teacher licensure; as well as specific provisions in teacher contracts, and some district-level administrative and fiscal variables.

I-A. District Level Demographics and Marker Variables

1.	School district size	
2.	Degree of school district bureaucratization	
3.	Degree of school district centralization	
4.	Presence of contractual limits on after-school meetings	
5.	Limits on class size	
6.	Presence of contractual restrictions on activities performed by aides	
7.	Degree of central office assistance and support for programs	*
8.	Degree of board of education support for instructional programs	*
9.	Per pupil expenditure	*
	Efficiency of transportation system	

I-B. State Level Policy Variables

1.	Teacher licensure requirements	*
2.	Degree of state control over textbooks	
3.	Degree of state control over curriculum	
4.	Academic course and unit requirements	*
5.	Minimum competency test requirements	
6.	Adherence to least restrictive environment/mainstreaming	*

Note: ** = highly important (mean rating of 2.6 and above, based on a 3-point scale)
* = moderately important (mean rating of 2.0 - 2.5, based on a 3-point scale)

Variables	Consensus Rating

Category II. Out of School Contextual Variables:

These are variables associated with the home and community contexts within which schools function. They include community demographics, peer culture, parental support and involvement, and amount of time students spend out-of-school on such activities as television viewing, leisure reading, and homework.

II-A. Community Variables

1. Socioeconomic level of community	••
2. Ethnic mix of community	•
3. Quality of social services for students	•

II-B. Peer Group Variables

1. Level of peers' academic aspirations	••
2. Level of peers' occupational aspirations	••
3. Presence of well defined clique structure	•
4. Degree of peers' substance abuse	••
5. Degree of peers' criminal activity	••

II-C. Home Environment and Parental Support Variables

1. Educational environment (e.g., number of books and magazines at home)	••
2. Parental involvement in assuring completion of homework	••
3. Parental involvement in assuring regular school attendance	••
4. Parental monitoring of student television viewing	••
5. Parental participation in school conferences and related activities	•
6. Parental application of appropriate, consistent discipline	••
7. Parental expression of attention to children	••
8. Parental interest in student's school work	••
9. Parental expectation for academic success	••

II-D. Student Use of Out of School Time Variables

1. Student participation in clubs and extracurricular school activities	
2. Amount of time spent on homework	•
3. Amount of time spent on leisure reading	•
4. Amount of time spent viewing educational television	
5. Amount of time spent viewing noneducational television	•

BEST COPY AVAILABLE

Variables	Consensus Rating

Category III. School Level Variables:

These are variables associated with school-level demographics, culture, climate, policies, and practices. They include demographics of the student body, whether the school is public or private, levels of funding for specific categorical programs, school-level decision making variables, and specific school-level policies and practices, including policies on parental involvement in the school.

III-A. Demographic and Marker Variables

1. Public versus private school	
2. Size of school	
3. Level of Chapter 1 (compensatory education) funding	•
4. Level of Title VII (bilingual) funding	
5. Level of PL 94-142 (handicapped) funding	•
6. Mix of socioeconomic levels in the school	•
7. Mix of cultural/ethnic groups in the school	
8. Mix of student language backgrounds in the school	

III-B. Teacher/Administrator Decision Making Variables

1. Teacher and administrator consensus on school values, norms, and roles	••
2. Principal actively concerned with instructional program	••
3. Teacher involvement in curricular decision making	••
4. Teacher involvement in instructional decision making	••
5. Teacher involvement in resource allocation decisions	•
6. Teacher involvement in finding ways to increase academic performance	••

III-C. School Culture Variables (Ethos Conducive to Teaching and Learning)

1. Use of cooperative, not exclusively competitive, goal structures	•
2. School-wide emphasis on and recognition of academic achievement	••
3. Low staff absenteeism	•
4. Low staff turnover	•
5. Low staff alienation	••
6. Active collaboration between regular classroom teachers and special education teachers	••
7. Safe, orderly school climate	••
8. Degree of school personnel professional collaboration	••

Variables	Consensus Rating

Category III. School Level Variables: (continued)

III-D. School-Wide Policy and Organizational Variables

1.	Presence of "effective schools program"	*
2.	Explicit school grading and academic progress policies	*
3.	Explicit school-wide discipline policy	*
4.	Explicit school-wide attendance policy	*
5.	Coordination of pullout programs for handicapped students with regular instructional programs	*
6.	Use of multi-age grouping	
7.	Use of instructional teaming	*
8.	Use of cross-age tutoring	*
9.	Use of peer tutoring	*
10.	Use of academic tracking for specific school subject areas	*
11.	Minimization of external classroom disruptions (e.g., broadcast announcements)	
12.	Adherence to least restrictive environment/mainstreaming	*
13.	Minimum use of suspension and expulsion as discipline tools	*

III-E. Accessibility Variables

1.	Accessibility of educational program (overcoming architectural, communication, and environmental barriers	*

III-F. Parental Involvement Policy Variables

1.	Parental involvement in improvement and operation of instructional programs	*
2.	School-sponsored parenting skills workshops (e.g., behavior modification, parent effectiveness training)	*

Variables	Consensus Rating

Category IV. Student Variables:

These are variables associated with individual students themselves, including demographics, academic history, and a variety of social, behavioral, motivational, cognitive, and affective characteristics.

IV-A. Demographic and Marker Variables

1. Chronological age	
2. Socioeconomic status	•
3. Gender	
4. Ethnicity	
5. First or native language	•
6. Physical and health status	•
7. Special education classifications (e.g., EMR, LD)	•

IV-B. History of Educational Placements

1. Prior grade retentions	•
2. Prior special placements	•
3. Current placement in regular class versus self-contained special education class	•

IV-C. Social and Behavorial Variables

1. Positive, nondisruptive behavior	••
2. Appropriate activity level	••
3. Cooperativeness with teacher	••
4. Cooperativeness with peers	••
5. Ability to make friends with peers	•

IV-D. Motivational and Affective Variables

1. Attitude toward school	••
2. Attitude toward teachers	••
3. Attitude toward subject matter instructed	••
4. Motivation for continual learning	••
5. Independence as a learner	••
6. Perseverance on learning tasks	••
7. Self-confidence	••
8. Academic self-competence concept in subject area instructed	••
9. Attributions for success and failure in subject area instructed	••

BEST COPY AVAILABLE

Variables	Consensus Rating
Category IV. Student Variables: (continued)	
IV-E. Cognitive Variables	
1. Piagetian stage of cognitive development	*
2. Level of reasoning (fluid ability)	**
3. Level of spatial ability	*
4. Memory	**
5. Level of general academic (crystallized) knowledge	**
6. Level of specific academic knowledge in subject area instructed	*
7. Level of reading comprehension ability	**
8. Level of writing ability	*
9. Level of computational ability	*
10. Level of oral fluency	*
11. Level of listening skills	**
12. Learning styles (e.g., field independent, visual/auditory learners, high cognitive complexity)	*
IV-F. Metacognitive Variables	
1. Self-regulatory, self-control strategies (e.g., control of attention)	**
2. Comprehension monitoring (planning: monitoring effectiveness of attempted actions; monitoring outcomes of actions; testing, revising, and evaluating learning strategies)	**
3. Positive strategies for coping with failure	**
4. Positive strategies to facilitate generalization of concepts	**
IV-G. Psychomotor Variables	
1. Psychomotor skills specific to area instructed	*

Variables	Consensus Rating

Category V. Program Design Variables:

These are variables associated with instruction as designed, and with the physical arrangements for its delivery. They include the instructional strategies specified by the curriculum, and characteristics of instructional materials.

V-A. Demographic and Marker Variables

1.	Size of instructional group (whole class, small group, one-on-one instruction)	••
2.	Proportion of students with special needs served in regular classes	•
3.	Number of classroom aides required	•
4.	Resources needed	•

V-B. Curriculum and Instructional Variables

1.	Clearly presented academic, social, and attitudinal program goals/ outcomes	••
2.	Use of explicit goal/objective setting for instruction of individual student (e.g., Individualized Educational Plans (IEPs)	•
3.	Use of mastery learning techniques, including use of instructional cues, engagement, and corrective feedback	••
4.	Use of cooperative learning strategies	•
5.	Use of personalized instructional program	•
6.	Use of prescriptive instruction combined with aspects of informal or open education	•
7.	Use of diagnostic-prescriptive methods	•
8.	Use of computer-assisted instruction	•
9.	Use of crisis management techniques to control classroom disruptiveness	•
10.	Use of program strategies for favorable affective climate	•
11.	Alignment among goals, contents, instruction, assignments and evaluation	••
12.	Curriculum units integrated around key discipline-based concepts	•
13.	Use of multidisciplinary approaches to instructional planning (including diagnosis in educational planning)	•
14.	Presence of information in the curriculum on individual differences and commonalities (including handicapping conditions)	•
15.	Presence of culturally diverse materials in the curriculum	•

BEST COPY AVAILABLE

Variables	Consensus Rating

Category V. Program Design Variables: (continued)

V-C. Curriculum Design Variables

1.	Materials employ alternative modes of representation	*
2.	Material is presented in a cognitively efficient manner	**
3.	Materials employ explicit and specific objectives	**
4.	Materials employ advance organizers	*
5.	Materials employ learning hierarchies	*
6.	Materials are tied to assessment and diagnostic tests	*
7.	Availability of materials and activities prepared specifically for use with whole classroom, small groups, or one-on-one instruction	*
8.	Degree of structure in curriculum accommodates needs of different learners	**
9.	Student interests guide selection of a significant portion of content	*
10.	Availability of materials and activities for students with different abilities	**
11.	Availability of materials and activities for students with different learning styles	**
12.	Developmental issues considered	*
13.	Student experiences considered	*

Variables	Consensus Rating
Category VI. Implementation, Classroom Instruction, and Climate Variables: These are variables associated with the implementation of the curriculum and the instructional program. They include classroom routines and practices, characteristics of instruction as delivered, classroom management, monitoring of student progress, and quality and quantity of instruction provided, as well as student-teacher interactions and classroom climate.	
VI-A Classroom Implementation Support Variables	
1. Creation and maintenance of necessary instructional materials	•
2. Adequacy in the configuration of classroom space	•
3. Availability of classroom aides	•
4. Use of written records to monitor student progress	
5. Establishing efficient classroom routines and communicating rules and procedures	
6. Developing student self-responsibility for independent study and planning of one's own learning activities	••
VI-B Classroom Instructional Variables	
1. Prescribing individualized instruction based on perceived match of type of learning tasks to student characteristics (e.g., ability, learning style)	•
2. Use of procedures requiring rehearsal and elaboration of new concepts	•
3. Use of clear and organized direct instruction	••
4. Systematic sequencing of instructional events and activities	••
5. Explicit reliance on individualized educational plans (IEPs) in planning day-to-day instruction for individual students	•
6. Use of instruction to surface and confront student misconceptions	•
7. Use of advance organizers, overviews, and reviews of obejctives to structure information	•
8. Clear signaling of transitions as the lesson progresses	•
9. Significant redundancy in presentation of content	•
10. Teacher conveys enthusiasm about the content	••
11. Directing students' attention to the content	••
12. Using reinforcement contingencies	••
13. Setting and maintaining clear expectations of content mastery	••
14. Providing frequent feedback to students about their performance	••
15. Explicitly promoting effective metacognitive learning strategies	•
16. Promoting learning through student collaboration (e.g., peer tutoring, group work)	•
17. Corrective feedback in event of student error	••
18. Flexible grouping that enables students to work to improve and change status/groups	••
19. Teaching for meaningful understanding	••
20. Degree to which student inquiry is fostered	••
21. Scaffolding and gradual transfer of responsibility from teacher to student	•
22. Degree to which assessment is linked with instruction	•
23. Skills taught within the context of meaningful application	••
24. Good examples and analogies to concretize the abstract and familiarize the storage	••
25. Consideration of the teacher's use of language in the instructional process	••
26. Explicitly promoting student self-monitoring of comprehension	••

BEST COPY AVAILABLE

Variables	Consensus Rating

Category VI. Implementation, Classroom Instruction, and Climate Variables: (continued)

VI-C. Quantity of Instruction Variables

1. Length of school year	
2. Length of school day	•
3. Time on task (amount of time students are actively engaged in learning)	••
4. Time spent in direct instruction on basic skills in reading	••
5. Time spent in direct instruction on basic skills in mathematics	••
6. Time allocated to basic skills instruction by regular classroom teacher	••
7. Time allocated to basic skills instruction by special education teacher	••
8. Difference between academic learning time and allocated learning time	•
9. Time spent out of school on homework	•
10. Time spent out of school viewing educational television	•
11. Time spent out of school in informal learning experiences (e.g., museum trips, scouts)	•
12. Nature of regular classroom content missed by students during participation in pullout programs	•

VI-D. Classroom Assessment Variables

1. Use of assessments to create detailed learner profiles rather than simple classifications or unlaborated total scores	•
2. Use of assessment as a frequent, integral component of instruction	•
3. Accurate, [illegible]uent measurement of basic skills in reading	•
4. Accurate, frequent measurement of basic skills in mathematics	•

VI-E. Classroom Management Variables

1. Minimal disruptiveness in classroom (e.g., no excessive noise, no students out of place during instructional activities, no destructive activities)	••
2. Group alerting (teaching uses questioning/recitation strategies that maintain active participation by all students)	••
3. Learner accountability (teacher maintains student awareness of learning goals and expectations)	••
4. Transitions (teacher avoids disruptions of learning activities, brings activities to a clear and natural close, and smoothly initiates new activity)	••
5. Teacher "withitness" (teacher is continually aware of events and activities and minimizes disruptiveness by timely and nonconfrontational actions)	••

BEST COPY AVAILABLE

Variables	Consensus Rating

Category VI. Implementation, Classroom Instruction, and Climate Variables: (continued)

VI-F. Student and Teacher Interactions: Social Variables

1. Student initiates positive verbal interactions with other students and with teacher	•
2. Student responds positively to questions from other students and from teacher	••
3. Teacher reacts appropriately to correct and incorrect answers	••
4. Teacher reinforces positive social interactions with students rejected by peers	••
5. Teacher provides explicit coaching on appropriate social behaviors	••
6. Teacher provides explicit coaching to reduce aggression	••

VI-G. Student and Teacher Interactions: Academic Variables

1. Teacher asks academic questions frequently	••
2. Teacher asks questions predominantly low in difficulty	•
3. Teacher asks questions that are predominantly low in cognitive level	•
4. Teacher maintains high post-question wait time	•
5. Frequent calls for extended, substantive oral and written response (not one-word answers)	•

VI-H. Classroom Climate Variables

1. Cohesiveness (members of class are friends sharing common interests and values and emphasizing cooperative goals)	•
2. Low friction (students and teacher interact in a considerate and cooperative way, with minimal abrasiveness)	••
3. Low cliqueness (students work with many different classmates, and not just with a few close friends)	•
4. Satisfaction (students are satisfied with class activities)	••
5. Speed (the pacing of instruction is appropriate for the majority of the students)	••
6. Task difficulty (students are continually and appropriately challenged)	••
7. Low apathy (class members are concerned and interested in what goes on in the class)	••
8. Low favoritism (all students are treated equally well in the class, and given equal opportunities to participate)	••
9. Formality (students are asked to follow explicitly stated rules concerning classroom conduct and activities)	•
10. Goal direction (objectives of learning activities are specific and explicit)	••
11. Democracy (all students are explicitly involved in making some types of classroom decisions)	•
12. Organization (class is well organized and well planned)	••
13. Diversity (the class divides its efforts among several different purposes)	•
14. Environment (needed or desired books and equipment are readily available to students in the classroom)	••
15. Competition (students compete to see who can do the best work)	•